

REMARKS

This Preliminary Amendment is filed in order to facilitate processing in the above-identified application and is filed in response to the Office Action dated February 23, 2004 in which the Examiner rejected claims 1, 6, 11, 22, 25, 30 and 32-35 under 35 U.S.C. §103 and rejected claims 17-21, 23, 24, 26-29 and 31 under 35 U.S.C. §102(b).

Claims 1 and 17 claims a screen-printing plate and claims 6 and 24 claims a method of manufacturing an electronic device. Printing patterns are disposed such that one printing pattern surrounds another. The shapes of the printing patterns are substantially the same while the mesh holes of each pattern are different sizes or have different aperture ratios.

Through the structure and method of the claims invention having one printing pattern surround another while having substantially the same shape and having different size mesh holes or different aperture ratios as claimed in claims 1, 6, 17 and 24, the claimed invention provides a screen-printing plate and method for manufacturing an electronic device having a reduced number of internal structural defects and having a uniform coating thickness. The prior art does not show, teach or suggest the invention as claimed in claims 1, 6, 17 and 24.

As indicated above, the claims have been amended to make explicit what is implicit in the claims. The amendments are unrelated to a statutory requirement for patentability.

Claims 1, 6, 33 and 35 were rejected under 35 U.S.C. §103 as being unpatentable over *Sanyal et al.* (U.S. Patent No. 4,872,261) in view of *Kamata* (Japanese Reference 6349663).

Sanyal et al. appears to disclose method for applying solder needed for surface mounting both fine pitch leads and standard leads. (col. 4, lines 35-37) FIG. 1 illustrates a printed wiring board 10 with a number of components, generally identified by reference numbers 12 and 14, mounted thereon to form a printed wiring assembly 15. (col. 5, lines 35-38) FIGS. 2 and 3 illustrate a stepped solder stencil 30 used to apply solder paste 31 prior to the lead bonding process. The stepped solder stencil 30 has a common flat surface 32 that is positioned opposite the printed wiring board 10. The stepped soldering stencil 30 has a thick section 34, here approximately 10 mils thick, formed with openings 36 where solder is applied over the surface contact pads 20 for the conventional leads 16. The stepped solder stencil 30 also has a thin section 38, within the thick section 34, approximately 4 mils thick. The thick section 34 and thin section 38 of the stencil 30 are separated by a step 39. Formed in the thin section 38 are openings 40 through which solder is applied over the surface contact pads 22 for the fine pitch leads 18. Openings 36 have dimensions of approximately 30.times.76 mils and are spaced apart at least a 50 mil pitch, openings 40 have dimensions of approximately 10.times.50 mils and are spaced apart at an approximately a 25 mil pitch. (col. 6, lines 14-32)

Thus, *Sanyal et al.* merely discloses a plurality of adjacently disposed patterns formed on a stencil 24. Nothing in *Sanyal et al.* shows, teaches or suggests that one printing pattern surrounds another as claimed in claims 1 and 6. Rather, *Sanyal et al.* teaches away from the claimed invention since the stencil clearly discloses adjacently disposed patterns.

Additionally, *Sanyal et al.* discloses at least two different types of patterns formed on the stencil. Nothing in *Sanyal et al.* shows, teaches or suggests that

shapes of two of the printing patterns which surround each other are substantially the same as claimed in claims 1 and 6. Rather, *Sanyal et al.* teaches away from the claimed invention since the plurality of adjacently disposed patterns have different shapes.

Finally, *Sanyal et al.* merely discloses having different pitch to the openings. Nothing in *Sanyal et al.* shows, teaches or suggests the first and second mesh hole sizes are different as claimed in claims 1 and 6.

Kamata et al. appears to disclose a screen printing consisting of a screen play part 11, and emulsion part 12, and an impression frame part 13.

Thus, *Kamata et al.* merely discloses a frame. Nothing in *Kamata et al.* shows, teaches or suggests a) one printing pattern surrounding another, b) the shapes of the printing patterns are substantially the same or c) different size mesh holes of the printing patterns as claimed in claims 1 and 6.

Since nothing in *Sanyal et al.* or *Kamata et al.* shows, teaches or suggests one printing pattern surrounding another while having substantially the same shape and different size mesh holes as claimed in claims 1 and 6, Applicants respectfully request the Examiner withdraws the rejection to claim 1 and 6 under 35 U.S.C. §103.

Claims 33 and 35 depend from claims 1 and 6 and recite additional features. Applicants respectfully submit that claims 33 and 35 would not have been obvious within the meaning of 35 U.S.C. §103 over *Sanyal et al.* and *Kamata et al.* at least for the reasons as set forth above. Therefore, Applicants respectfully request the Examiner withdraws the rejection to claims 33 and 35 under 35 U.S.C. §103.

Claim 11 was rejected under 35 U.S.C. §103 as being unpatentable over *Sanyal et al.* in view of *Kamata* and further in view of Applicants' admitted prior art. Claims 32 and 34 were rejected under 35 U.S.C. §103 as being unpatentable over *Sanyal et al.* in view of *Kamata* and further in view of *Comino et al.* (U.S. Patent No. 6,095,041).

Applicants respectfully traverse the Examiner's rejection of the claims under 35 U.S.C. §103. The claims have been reviewed in light of the Office Action, and for reasons which will be set forth below, Applicants respectfully request the Examiner withdraws the rejection to the claims and allows the claims to issue.

As indicated above, since nothing in *Sanyal et al.* and *Kamata et al.* show, teach or suggest the primary features as claimed in claims 1 and 6, Applicants respectfully submit that the combination of the primary references with the secondary references will not overcome the deficiencies of the primary references. Therefore, Applicants respectfully request the Examiner withdraws the rejection to claims 11, 32 and 34 under 35 U.S.C. §103.

Claims 17-21, 23-24, 26-29 and 31 were rejected under 35 U.S.C. §102(b) as being anticipated by *Balog et al.* (U.S. Patent No. 5,669,970).

Balog et al. appears to disclose a stencil used in applying solder paste in a desired pattern for mounting electronic components on a surface of a circuit board. (col. 1, lines 6-8) A stencil used to apply solder paste in a desired pattern for mounting electronic components on the surface of a circuit board. The stencil is made of a sheet that has holes through it in a pattern corresponding to the desired solder pattern and has a smooth upper surface. The upper surface has relieved portions in it so as to increase the friction between it and the solder paste that is

squeegeed thereover with a squeegee blade. The increase in friction permits one to maintain the rolling action of the solder and good filling of stencil holes at the same time that one increases the speed of travel of the squeegee blade. (col. I, lines 30-41)

Thus, *Balog et al.* merely discloses in Figure 2 a stencil having a plurality of patterns. Nothing in *Balog et al.* shows, teaches or suggests a) one printing pattern surrounding another, b) the shapes of the printing patterns are substantially the same and c) the aperture ratios of the mesh holes of the patterns are different as claimed in claims 17 and 24. Rather, Figure 2 of *Balog et al.* merely discloses a plurality of patterns adjacently disposed and having the same aperture ratio.

Since nothing in *Balog et al.* shows, teaches or suggests a) one printing pattern surrounding another b) shapes of the printing patterns being substantially the same and c) having different aperture ratios of the mesh holes of the printing patterns as claimed in claims 17 and 24, Applicants respectfully the Examiner withdraws the rejection to claims 17 and 24 under 35 U.S.C. §102(b).

Claims 18-21, 23, 26-29 and 31 depend from claims 17 and 24 and recite additional features. Applicants respectfully submit that claims 18-21, 23, 26-29 and 31 would not have been anticipated by *Balog et al.* within the meaning of 35 U.S.C. §102(b) at least for the reasons as set forth above. Therefore, Applicants respectfully request the Examiner withdraws the rejection to claims 18-21, 23, 26-29 and 31 under 35 U.S.C. §102(b).

Claims 22 and 30 were rejected under 35 U.S.C. §103 as being unpatentable over *Balog et al.* in view of *Comino et al.* Claim 25 was rejected under 35 U.S.C. §103 as being unpatentable over *Balog et al.* in view of Applicants admitted prior art.

Applicants respectfully traverse the Examiner's rejection of the claims under 35 U.S.C. §103. The claims have been reviewed in light of the Office Action, and for reasons which will be set forth below, Applicants respectfully request the Examiner withdraws the rejection to the claims and allows the claims to issue.

As indicated above, since nothing in the *Batog et al.* shows, teaches or suggests the primary features as claimed in claims 17 and 24, Applicants respectfully submit that the combination of the primary references with the secondary references will not overcome the deficiencies of the primary references. Therefore, Applicants respectfully request the Examiner withdraws the rejection to claims 22, 30 and 25 under 35 U.S.C. §103.

Thus, it now appears that the application is in condition for reconsideration and allowance. Reconsideration and allowance at an early date are respectfully requested.

If for any reason the Examiner feels that the application is not now in condition for allowance, the Examiner is requested to contact, by telephone, the Applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed within the current set shortened statutory period, Applicants respectfully petition for an appropriate extension of time.

The fees for such extension of time may be charged to our Deposit Account No. 02-4800.

In the event that any additional fees are due with this paper, please charge
our Deposit Account No. 02-4800.

Respectfully submitted,

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